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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,102	06/30/2003	Krishna Rao Boyapati	132479	9234

6147 7590 08/07/2008

GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER	
HANDAL, KAITY V	

ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
08/07/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/609,102	BOYAPATI ET AL.	
	Examiner	Art Unit	
	KAITY V. HANDAL	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) *1-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avery (USP 4,476,249) in view of Wolf (WO 01/38456).

Regarding claims 22, 30-31 and 37, Avery discloses a system for co-producing hydrogen and electrical power comprising:

- an energy generating system (20) for generating energy from an intermittent renewable energy source;
- a production system (16) in energy communication with said energy generating system (20) for producing hydrogen and oxygen;
- a hydrogen-delivery system in fluid communication with said production system (16) for receiving at least a portion of said hydrogen from said production system (Fig. 1); said hydrogen-delivery system further configured to channel at least a portion of said hydrogen to at least one of a power generation system or a hydrogen storage system (Fig. 1); or
- a hydrogen-delivery system in fluid communication with said production system (16) for receiving at least a portion of said hydrogen from said production system (Fig. 1); said hydrogen-delivery system further configured to channel at least a portion of said hydrogen to at least one of a power generation system (Fig. 1); and
- an oxygen delivery system in fluid communication with said production system (16)

for receiving at least a portion of said oxygen from said production system (16);

- said oxygen delivery system further configured to channel at least a portion of said oxygen to a biomass/(wood) (C8/L 11-17) gasification system (fig. 3, 10) to produce synthesis gas by partial oxidation of a biomass feedstock (intended use language) (col. 8, lines 31-36);

- wherein said gasification system (10) is further configured to channel at least a portion of a synthesis gas to said power generation system (Fig. 1).

While Avery does disclose that said gasification system gasifies coke, the reference does not disclose said coke being obtained from biomass.

Wolf teaches the system for gasification of coke obtained from partial oxidation of biomass (page 4, lines 4-12) by use of oxygen obtained from a production system in energy communication with an energy generating system for generating energy from an intermittent renewable energy source (Fig. 1, abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to use coke obtained from biomass in the system of Avery, as taught by Wolf, since doing so would amount to nothing more than a use of a known material for its intended use in a known environment to accomplish entirely expected result.

Regarding claims 23-28, 32-36 and 38-42, Avery in view of Wolf disclose all of the claim limitations as set forth above. Additionally Avery discloses the system further comprising:

- a hydrogen-reforming system (12) for reforming said hydrogen from at least a portion of said synthesis gas; wherein said hydrogen-reforming system (12) is further

configured to channel said hydrogen from said hydrogen-reforming system to said hydrogen-delivery system (Fig. 1);

- wherein said power generation system comprises a hydrogen-based electricity production system (28);

- wherein said hydrogen-based electricity production system (28) comprises at least one of fuel cell-based electricity production system or a micro-turbine-based electricity production system or an internal combustion engine-based electricity production system or a combination thereof (Fig. 1);

- wherein said intermittent renewable energy comprises at least one of wind energy or solar energy or tidal energy (abstract);

- wherein said energy comprises at least one of thermal energy or electrical energy (abstract);

- wherein said production system is selected from the group consisting of an electrolysis system, a thermal splitting system, an electro-thermal splitting system, a thermo-chemical splitting system, a photo-chemical splitting system, a photo-electrochemical splitting system and combinations thereof (abstract).

Regarding claim 29, while Avery does not explicitly disclose any specific design of said gasifier, said gasifier would, inherently comprises at least one of a fixed bed gasification system or a fluidized bed gasification system.

Regarding limitations recited in claims 22-42 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not

differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

4. Prior Art: Applicant's arguments filed 5/9/2008 have been fully considered but they are not persuasive.

5. Applicant argues that neither Avery nor Wolf describe of suggest the production of hydrogen. Examiner respectfully disagrees. Avery teaches that hydrogen is a product of the gasifier/gas clean-up sulfur recovery step, as illustrated in Figure 1. The fact that Avery uses the hydrogen produced for methanol production which then powers

a fuel cell (28) as illustrated, does not differ from having a hydrogen delivery system channel a portion of said hydrogen to a power generation system as in instant claim 22.

6. Applicant argues that neither Avery nor Wolf describe or suggest intermittent renewable energy source and hence their hypothetical combination cannot suggest this aspect. Examiner respectfully disagrees. A translation of the Wolf patent reference is provided in support of the statements presented in the Wolf abstract. However, USP 4,982,569 was used as evidence that OTEC is intermittent – (see "Response to Arguments" of Final Office Action mailed 7/12/2008, paragraph 7).

7. Applicant argues that the though Wolf's coal is derived from biomass, the combination of Avery and Wolf does not anticipate the instant invention and that there is a difference between processing coal and biomass. Examiner respectfully disagrees. Avery does teach that one of the alternatives to coal as a carbon source is wood (see col. 8, lines 15-17), furthermore, given that Wolf's coal is derived from biomass, one skilled in the art at the time of the invention would conclude that biomass products can be processed in Wolf's apparatus.

8. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KH 7/31/08

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795